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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,796	10/01/2001	David M. Goldenberg	IMMU:007US3	3640

37013 7590 10/03/2008

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ART UNIT	PAPER NUMBER
1643	

MAIL DATE	DELIVERY MODE
10/03/2008	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/965,796
Filing Date: October 01, 2001
Appellant(s): GOLDENBERG, DAVID M.

Barbara A. McDowell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 14, 2008 appealing from the Office action mailed December 12, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the Examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

U.S. Patent Application number 10/314,330, which is a continuation of the present application.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5789554	LEUNG	08-1998
5106955	ENDO	04-1992
5686072	UHR	02-1994
5698178	GOLDENBERG	04-1998

Maloney, D.G. et al. "Phase I Clinical Trial Using Escalating Single-Dose Infusion of Chimeric Anti-CD20 Monoclonal Antibody (IDEC-C2B8) in Patients with Recurrent B-Cell Lymphoma" Blood, Vol. 84, No. 8 (October 15, 1994), pp. 2457-2466.

Li, J. et al. "The Epitope Specificity and Tissue Reactivity of Four Murine Monoclonal Anti-CD22 Antibodies", Cellular Immunology, Vol. 118 (1989), pp. 85-99.

WO 95/009917 (April 13, 1995).

European Patent Application 0 510 949 A2 (October 28, 1992).

WO 96/04925 (February 22, 1996).

Webster's II New Riverside University Dictionary, page 307, Houghton Mifflin Company, Boston, MA, 1984.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

A. Claims 24-26, 36-38, 44, 47, 52, 55-57, 98 and 99 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,789,554 (filed July 31, 1996), and in further view of Maloney et al. (Blood 84(8): 2457-2466, October 15, 1994/ IDS reference A11) and Li et al. (Cellular Immunology 118: 85-99, 1989). U.S. Patent number 5,789,554 teaches "[c]onjugates of chimeric and humanized chimeric LL2 antibodies with cytotoxic agents or labels.., use[d] in therapy.., of B-cell lymphomas and

leukemias", see last sentence of the Abstract and column 2, lines 56-62. It is art known that LL2 antibodies are anti-CD22 monoclonal antibodies. The patent reveals the implementation of fragments from both human and murine immunoglobulin chains in methods of treatment, see column 2, lines 37-50; column 2, line 65-column 3, line 15.

These antibodies of the taught method could be attached to cytotoxic agents, as well as chemotherapeutic drugs, chelators, fluorescent molecules, radionuclides or toxins, see column 5, lines 20-28; Example 9 of columns 19 and 20 and with particularity lines 9-18 in column 20. The disclosed antibodies can be conjugated to a ^{131}1 radioisotope, as well as ^{90}Y or ^{111}In using a chelating agent, see column 9, lines 35-40; column 20, lines 35-42.

The patent does not teach a method for a subject having a B-cell malignancy, wherein the immunoconjugate comprises both, at least one human, humanized or chimeric anti-CD22 antibody or a fragment thereof and a naked anti-CD20 monoclonal antibody. U.S. Patent '554 also does not teach a therapeutic composition comprising at least two monoclonal antibodies that bind distinct CD22 epitopes.

However, Maloney teaches a method for treating B-cell lymphoma, Non-Hodgkin's lymphoma (NHL), as well as other leukemias and lymphomas with a chimeric anti-CD20 monoclonal antibody (also known as a naked anti-CD20 monoclonal antibody, IDEC-C2B8, C2B8, RITUXAN® (rituximab)) with a dosage ranging from 10-500mg/m2, see abstract. It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to administer a therapeutic combination of antibodies of known anticancer antibodies to effectively treat B cell

malignancies, Maloney, see page 2465, last paragraph. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings in both references, that a mixture of antibodies to the different epitopes of would be more efficacious in therapeutic methods, as well as enhance the treatment modality, see Maloney, page 2465, last paragraph.

And, Li teaches that four anti-CD22 monoclonal antibodies, UV22-1, UV22-2, HD6 and RFB47 recognize CD22 A and B epitopes. It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to administer a combination of antibodies to different CD22 epitopes, as taught in the Li reference in the method of treating B cell malignancies as taught in the patent. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings in the Li reference, that a mixture of antibodies to the different epitopes of CD-22 would be a more efficacious in therapeutic methods, as well as enhance the treatment modality.

One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings of all the references to combine to antibodies of the patent and Maloney. Further, it is within the purview of one skilled in the art to combine different components that have similar end results. See MPEP § 2144.06, where it is stated that "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of

combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850,205 USPQ 1069, 1072 (CCPA 1980).

B. Claims 24-27, 36-38, 44, 52, 55-57, 98 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,789,554 (filed July 31, 1996), and further in view of Maloney et al. (Blood 84(8): 2457-2466, October 15, 1994/IDS reference A11) and U.S. Patent number 5,106,955 (April 21, 1992). The teachings of patent #5,789,554 and Maloney have been presented in the previous cited 103(a) rejection. Those two references did not teach a method for treating a B-cell malignancy wherein the therapeutic composition comprises specifically chemotherapeutic drugs, a nitrosourea derivative, hormones and an antiviral toxin linked via crosslinking agents.

However, U.S. patent #5,106,995 teaches the specific chemotherapeutic drugs, nitrosourea and hormones and antiviral toxins, see entire page with columns 5 and 6. It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to administer a therapeutic combination of a known anticancer antibody with other anticancer molecules in the method of treating B cell malignancies, as taught in both patents. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings in the patents that conjugates of anti-CD22 antibodies and anti-CD20 mabs with anticancer agents are efficacious in the treatment of B-cell lymphomas and leukemias, see patent '554, abstract and Example 9 of columns 19 and 20; Maloney, page 24t5b, column 1, last paragraph; and patent '955, abstract and columns 5 and 6. It is *prima facie* obvious to

combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

C. Claims 24-26, 36-42, 44, 52, 55-57, 98 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,789,554 (filed July 31, 1996), in view of Maloney et al. (Blood 84(8): 2457-2466, October 15, 1994/ IDS reference A11), U.S. Patent Number 5,686,072 (filed February 22, 1994/IDS reference A1) and WO 95/09917 (April 13, 1995/IDS reference A5).

The teachings of patent '554 and Maloney have been described in the initial 103(a) rejection. These references do not teach a multivalent fusion protein that additionally comprises at least one antibody component that binds with CD19 or a trivalent, tetravalent or quintavalent fusion.

However, U.S. patent #5,686,072 teaches the administration of an unconjugated anti-CD19 antibody (also regarded as a naked antibody), toxins (ricin, diptheria toxins in a mixture with anti-CD22 for the immunotherapeutic treatment of cancer, see abstract. It would have prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to combine an anti-CD19 antibody with an anti-CD22 antibody as taught in patent '072. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by the teachings of both patents that the co-

administration of anti-CD19 and anti-CD22 antibodies appears to provide a synergistic and advantageous cancer treatment, see both patents.

The WO document teaches that recombinant bispecific tetravalent antibodies are useful in both therapeutic and immunodiagnostic applications and can be produced with relative ease.

It would have been prima facie obvious to one of ordinary skill in the art at the time of claimed invention to produce a tetravalent construct comprising anti-CD22 antibodies, as well as trivalent and quintavalent fusion proteins. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings in both patents and the WO document that tetravalent antibody constructs are more effective than monoclonal antibody to effectively target more antigenic sites on the cancer cells and to advantageously increase the avidity of antigen binding. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

D. Claims 24-26, 36-39, 44, 45, 52, 55-57, 60-70, 73-77, 91-93, 98 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,789,554 (filed July 31, 1996), in view of in view of Maloney et al. (Blood 84(8): 2457-2466, October 15, 1994/IDS reference A11) and European Patent Application 0 510 949 A2 (October 28, 1992/IDS reference A4).

The teachings of patent '554 and Maloney have been described in the initial 103(a) rejection. These references do not teach a therapeutic composition comprising the said anti-CD22 antibody and an immunomodulator, such as a CD19 antibody component and toxins.

However, EP 0 510 949 A2 teaches conjugate formulas comprising two moieties, wherein both have physiological activity, see column 3, lines 3-6. The moieties may be an antibody and fragments thereof, interleukins 1-10, molecules that bind CD19 (regarded by the Examiner as an antibody), growth factors, GM-CSF, G-CSF and toxins (i.e., ricin, diptheria toxins) in a mixture with anti-CD22 for the immunotherapeutic treatment of cancer, see abstract and column 3, lines 24-47. It would have prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to combine efficacious anti-tumor agents within an anti-cancer therapeutic composition. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by the teachings of both patents that such conjugate compositions provide a synergistic and advantageous cancer treatment, see both

patents. It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

E. Claims 24-27, 36-38, 43, 44, 52, 55-89, 98 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent number 5,789,554 (filed July 31, 1996), and further in view of Maloney et al. (Blood 84(8): 2457-2466, October 15, 1994/IDS reference A11) and U.S. Patent number 5,698,178 (filed April 8, 1998).

The teachings of patent '554 and Maloney have been described in the initial 103(a) rejection. These references do not teach a method for treating a subjection having a B-cell malignancy comprising a therapeutic composition comprising a chemotherapeutic drug, immunomodulator, antiviral drugs, radioisotope, boron addend, anti-bacterial drug and photoactive agent or dye, as well as specific modes of attaching these molecules. Moreover, patent '554 and Maloney do not teach the administration of the immunoconjugate comprising an anti-CD22 antibody with radioisotopes iodine and yttrium in the specific dosages set forth in claims 94-97.

However, U.S. patent #5,698,178 teaches specific radioisotopes, ^{198}Au, ^{32}P, ^{125}1, ^{90}Y, ^{186}Re, ^{188}Re, ^{67}Cu and ^{211}At; toxins, ricin A-chain, *Psuedomonas* endotoxin, gelonin, ribonuclease, abrin, and pokeweed antiviral protein; chemotherapeutic drugs, nitrogen msutards, alkyl sulfonates, nitrosoureas, triazenses, folic acid analogs,

antiboitics, platinum coordination complexes, hormones, pyrimidine analogs; boron addends, such as carboranes; and immunomodulators, granulocyte-colony stimulating factor (G-CSF), GM-CSF, IL-1 and IL-3, see, see column 4, lines 35-56; column 6, lines 15-19; column 8, lines 26-36; column 16, line 59-column 17, line 2; column 23, line 11-column 24, line 6; column 31, lines 34-37. The patent also teaches the use of fluorescent chromogens or dyes, such as porphyrins in therapy termed photoradiation or photodynamic therapy in order to destroy a tumor population, see column 24, lines 7-31, 45-54. Patent '178 also teaches modes of attaching the therapeutic agents to the antibodies and antibody fragments, $F(ab')_2$, $F(ab)_2$, Fab' and Fab via chelators such as ethylenediaminetetraacetic acid, DPTA, polyethyleneglycol, TETA and a carrier polymer such as aminodextran, see column 15, lines 56-67; column 17, lines 57-67; column 20, lines 28-34; and column 23, lines 19-31. Attachment of therapeutic agents to anti-CD22 antibodies may be implemented via a free sulfhydryl group, see column 14, lines 28-38 and column 17, lines 57-67. It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to administer a therapeutic combination of a known anticancer antibody with other anticancer molecules in the method of B cell treatment.

Additionally, it would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to administer the naked anti-CD22 antibody in the recited dosages. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings well known in

the art, that dosages of any pharmaceutical composition must be adjusted and optimized.

F. Claims 24-27, 38, 43, 44, 52, 55-89, 98 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/04925 (22 February 1996/IDS reference A8), and further in view of Maloney et al. (Blood 84(8): 2457-2466, October 15, 1994/ IDS reference A11) and U.S. Patent number 5,698,178 (filed April 8, 1998).

The WO document teaches immunoconjugates comprising chimeric and humanized LL2 antibodies with cytotoxic agents, labels, as well as therapeutic agents attached indirectly via linkages in therapy of B-cell lymphomas and leukemias, see Abstract and page 1, lines 5-12; page 3, line 31-page 4, line 13; page 7, lines 27-38; and page 33, lines 15-24. The document reveals the implementation of fragments from both human and murine immunoglobulin chains in methods of treatment, see page 3, line 24-page 4, line 5; page 4, lines 14-32. A wide variety of diagnostic and therapeutic reagents can be conjugated to the disclosed antibodies such as doxorubicin, taxol, chelators, detectable labels such as fluorescent molecules, cytotoxic agents such as heavy metals or radionucleoides and toxins such as Pseudomonas exotoxin, see page 8, lines 17-26; page 33, lines 3-11 ; and page 33, line 33-page 34, line 10. The disclosed antibodies can be conjugated to a radioisotope other than 1311 for example 90y or 1111n using a chelating agent, see page 34, lines 3-10. The WO document does not teach a method for a subject having a B-cell malignancy, wherein the immunoconjugate comprises both, at least one human, humanized or chimeric anti-CD22 antibody or a fragment thereof and a naked anti-CD20 monoclonal antibody.

Moreover, WO document 96/04925 does not teach the administration of the immunoconjugate comprising an anti-CD22 antibody with radioisotopes iodine and yttrium in the specific dosages set forth in claims 94-97.

However, Maloney teaches a method for treating B-cell lymphoma, Non-Hodgkin's lymphoma (NHL), as well as other leukemias and lymphomas with a chimeric anti-CD20 monoclonal antibody (also known as a naked anti-CD20 monoclonal antibody, IDEC-C2B8, C2B8, RITUXAN® (rituximab)) with a dosage ranging from 10-500mg/m2, see abstract. It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to administer a therapeutic combination of antibodies of known anticancer antibodies to effectively treat B cell malignancies, Maloney, see page 2465, last paragraph. 'One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by teachings in both references, that a mixture of antibodies to the different epitopes of would be more efficacious in therapeutic methods, as well as enhance the treatment modality, see Maloney, page 2465, last paragraph. Moreover, it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

However, U.S. patent #5,698,178 teaches specific radioisotopes, ^{198}Au, ^{32}P, ^{125}1, ^{90}Y, ^{186}Re, ^{188}Re, ^{67}Cu and ^{211}At; toxins, ricin A-chain, *Psuedomonas* endotoxin gelonin,

ribonuclease, abrin, and pokeweed antiviral protein; chemotherapeutic drugs, nitrogen msutards, alkyl sulfonates, nitrosoureas, triazenses, folic acid analogs, antibiotics, platinum coordination complexes, hormones, pyrimidine analogs; boron addends, such as carboranes; and immunomodulators, granulocyte-colony stimulating factor (G-CSF), GM-CSF, IL-I and IL-3, see, see column 4, lines 35-56; column 6, lines 15-19; column 8, lines 26-36; column 16, line 59-column 17, line 2; column 23, line 11-column 24, line 6; column 31, lines 34-37. The patent also teaches the use of fluorescent chromogens or dyes, such as porphyrins in therapy termed photoradiation or photodynamic therapy in order to destroy a tumor population, see column 24, lines 7-31 and 45-54. Patent '178 also teaches modes of attaching the therapeutic agents to the antibodies and antibody fragments, F(ab')2, F(ab)2, Fab' and Fab via chelators such as ethylenediaminetetraacetic acid, DPTA, polyethyleneglycol, TETA and a carrier polymer such as aminodextran, see column 15, lines 56-67; column 17, lines 57-67; column 20, lines 28-34; and column 23, lines 19-31. Attachment of therapeutic agents to anti-CD22 antibodies may be implemented via a free sulfhydryl group, see column 14, lines 28-38 and column 17, lines 57-67. It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of both documents to administer a therapeutic combination of a known anticancer antibody with other anticancer molecules in the method of B cell treatment.

Additionally, it would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to administer the naked anti-CD22 antibody in the recited dosages. One of ordinary skill in the art would have been

motivated to do so with a reasonable expectation of success by teachings well known in the art, that dosages of any pharmaceutical composition must be adjusted and optimized.

Double Patenting

Claims 24-27, 36-44, 47, 52, 55-59, 98 and 99 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 24-47 of copending Application No. 10/314,330 (filed December 9, 2002). Although the conflicting claims are not identical, they are not patentably distinct from each other because the method claims of both applications are directed toward treating a B-cell malignancy comprising administering an anti-CD22 antibody with an additional therapeutic agent, such as an additional antibody, chemotherapeutic agent, radiolabel or cytokine.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

(10) Response to Argument

Appellants reiterate the rejections cited by the Examiner beginning with the first cited 103(a) rejection set forth as "A" under section (9) Grounds of Rejection in instant Action, see page 4 of the Brief. Leung teaches immunoconjugates of LL2 antibodies, art known as anti-CD22 monoclonal antibodies, including humanized antibodies with cytotoxic agents or labels for the treatment of B-cell lymphomas and leukemias. The WO document, WO 96/04925 (22 February 1996/ IDS reference A8) is the published

PCT counterpart of Leung and thus the Responses herein apply equally to the 103(a) rejection cited herein as "F" beginning on page 12. Leung is silent in teaching the said immunoconjugate is in combination with a naked anti-CD20 mAb. However, the secondary reference, Maloney does teach implementing an anti-CD20 antibody in a method of treating a B-cell malignancy and Li is relied upon for the teaching, a mixture of antibodies can recognize several epitopes of CD22. The Examiner cited as motivation to combine the references text found within the last paragraph of page 2465 of Maloney, wherein “using antibody alone or in combination with conventional therapies, may provide the greatest benefit”. However, Appellants assert the skilled artisan would be discouraged from combining the references because conventional therapies as of 1994 were chemotherapies and not antibody therapies, see page 5 of the Brief. As noted in the Brief on page 6, 1st full sentence, the Examiner provided Appellants with the definition of the term, “conventional” citing Webster's Collegiate Dictionary as defining the term as "developed, established, or approved by general usage: customary." Appellants countered Webster’s definition with a meaning provided by the American Heritage Dictionary of the English Language, noting “conventional” means “conforming to established practice or accepted standards: traditional”, see page 6 of Brief, 1st full paragraph.

The Examiner reasonably regards the practice of combining two well-known and established antibodies as conventional therapy. The teaching of implementing CD22 antibodies in methods of treating B-cell malignancies is of record as early as April 1991 as seen on the face of the patent, see Goldenberg reference listed in the 2nd column.

Hence, combining the teachings of Leung with Maloney is not outside the realm of reading on an antibody in combination with another antibody as a conventional therapy. It is clear at the time of filing the instant application, March 1997, CD22 antibodies had been in use for at least 6 years and directed to treating B cell malignancies. Appellants' arguments based upon numerous publications allegedly supporting combination antibody therapy is not conventional therapy is moot because these papers all set forth epratuzumab as the CD22 antibody used in combination with CD20 antibody, rituximab or IMMU-106, see Brief, page 7, section 4. Moreover, the three declarations filed March 20, 2007 simply set forth the definition of "conventional" and note the Goldenberg reference of 1991 was a Phase I study observing any evidence of efficacy in a small number of patients and does not establish treatment with a CD22 antibody was conventional. The three declarants state combination therapy has not been approved and even single antibody therapy was not considered conventional in 1994.

The pending rejections are based on prior art teaching LL2 monoclonal antibody, which is distinct from the CD22 antibody listed in Applicants' supporting references noting epratuzumab. The claims do not limit with any particularity specific antibodies to be implemented in the claimed invention, hence arguments based upon these papers are not commensurate. Dr. Goldenberg's publication which is related to a pilot Phase I study does not teach away from the fact CD22 antibody, particularly LL2 monoclonal antibody was implemented in a method of treating B-cell lymphomas and was successful in garnering positive responses. The teachings of Appellants' submission of published papers and declarations do not preclude one of ordinary skill in the art from

combining two antibody compositions with established known functions. Appellants attempt to further arguments against the pending 103(a) rejections citing an unpredictable increase in efficacy when a combination of the antibodies according to the present invention is administered, see page 15 of the Brief. Once again Appellants reference CD22 antibodies, which are not the same as those referenced in the prior art, hence one of ordinary skill in the art can only presume to know the effect of the antibodies cited in the prior art.

The two antibodies taught in the prior art of record were known to effectively treat B-cell malignancies so it would be reasonable to infer together these antibodies would only potentiate the other. The teachings of the prior art documents reasonably establish motivation to combine the two antibodies for a method of treatment, especially in light of their success in individual treatments. *In re Kerkhoven* supports the Examiner's position, one of ordinary skill in the art would have been motivated to combine these two antibody compositions for the enhancement of B-cell malignancy treatment modality. In view of patent '554 and Maloney as references that are more than sufficient in establishing the bases of the pending 103(a) rejections the additional secondary references are complementary and proper.

In regard to the provisional rejection of claims 24-27, 36-44, 47, 52, 55-59, 98 and 99 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 24-47 of copending Application No. 10/314,330 (filed December 9, 2002) Appellants noted this rejection is being held in abeyance until allowable subject matter has been indicated, see page 22 of the Brief

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Alana M. Harris, Ph.D.

/Alana M. Harris, Ph.D./

Primary Examiner, Art Unit 1643

Conferees:

/Larry R. Helms/

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Supervisory Patent Examiner, TC 1600